

REMARKS

By this Amendment, an Abstract is submitted on a separate sheet of paper as required by the Office Action and the specification is amended to eliminate reference to the claims and the claims are amended to overcome various claim objections the rejection under 35 U.S.C. 112, second paragraph and to merely clarify the recited subject matter.

The Office action rejected claims 1-4, 6, 8-9, 12-18, 20-22, 24-26 and 29 as being unpatentable under 35 U.S.C. 102(e) as being anticipated by Sipila (U.S. 6,327,268). The Examiner has rejected claims 5, 7 and 10-11 as being unpatentable under 35 U.S.C. 103 as being obvious from Sipila. Applicant traverses these prior art rejections because Sipila fails to disclose, teach or suggest all the features recited in the rejected claims. For example, Sipila fails to disclose, teach or suggest:

- a mobile communication system wherein "the interworking function is configured to adapt each PPP subchannel to the respective PPP link on said multilink PPP connection so that the PPP links are transferred transparently between the multilink protocol means of the mobile station and the access point," as recited in independent claim 1 and its dependent claims 2-14;
- a mobile station for a mobile communication system, the mobile station comprising means for inserting said at least two PPP links into two or more PPP subchannels whose number corresponds to that of the PPP links for transferring each PPP link in a dedicated PPP subchannel on said first subleg," as recited in independent claim 15 and its dependent claims 16-20;
- an interworking function for a mobile communication network, the interworking function comprising means for inserting PPP links of the second multilink PPP subleg into a corresponding number of PPP subchannels on said first subleg for transferring each PPP link in a dedicated PPP subchannel so that the PPP links are transferred transparently through the mobile communication network between the mobile station and the access point," as recited in independent claim 21 and its dependent claims 22-24; and
- a method of establishing a high-speed point-to-point data connection, including "establishing a multilink point-to-point connection between the mobile station and the other party, dividing the subleg between the mobile station and the interworking function into subchannels, and transferring each link of the multilink point-to-point connection in a dedicated subchannel on the subleg between the mobile station and the interworking function" as recited in claim 25 and its dependent claims 26-29.

Sipila merely relates to high speed data services for DECT/GSM interworking. In Sipila, ISDN data signals between a DECT fixed part (FP) and a GSM switch are transferred

over a 64 kbit/s ISDN channel or multiple 64 kbit/s ISDN channels instead of the A interface of the GSM system. Thus, the ISDN interworking is located at the DECT fixed part.

In Sipila, the DECT radio interface supports the ISDN signal format, and therefore 64 kbit/s or higher rate ISDN signal can be conveyed over the DECT air interface. Thus, Sipila avoids the restriction of the data rate to 9600 kbit/s second due to the Radio Link Protocol (RLP) and the conventional A interface in DECT/GSM hybrid systems, since the RLP, according to the GSM specifications, is not employed at the A interface (rather, the ISDN format is used between the DECT fixed part and the GSM switch).

Therefore, Sipila fails to teach or suggest an interworking function that is configured to adapt each PPP link of a multilink PPP to a corresponding number of subchannels on a second connection leg between the interworking function and a mobile station, in order to transfer the PPP links transparently between the mobile station and the network access point. The Office Action also rejected claims 1-29 under 35 U.S.C. 103 as being unpatentable over Gavrilovich (U.S. 5,771,229) in view of Maurya (U.S. 6,160,808). Applicant traverses this prior art rejection because Gavrilovich and Maurya, analyzed individually or in combination, fails to disclose, teach or suggest all the features recited in the rejected claims. For example, the combined teachings of Gavrilovich and Maurya fail to disclose, teach or suggest:

- a mobile communication system wherein “the interworking function is configured to adapt each PPP subchannel to the respective PPP link on said multilink PPP connection so that the PPP links are transferred transparently between the multilink protocol means of the mobile station and the access point,” as recited in independent claim 1 and its dependent claims 2-14;
- a mobile station for a mobile communication system, the mobile station comprising means for inserting said at least two PPP links into two or more PPP subchannels whose number corresponds to that of the PPP links for transferring each PPP link in a dedicated PPP subchannel on said first subleg,” as recited in independent claim 15 and its dependent claims 16-20;
- an interworking function for a mobile communication network, the interworking function comprising means for inserting PPP links of the second multilink PPP subleg into a corresponding number of PPP subchannels on said first subleg for transferring each PPP link in a dedicated PPP subchannel so that the PPP links are transferred transparently through the mobile communication network between the mobile station and the access point,” as recited in independent claim 21 and its dependent claims 22-24; and
- a method of establishing a high-speed point-to-point data connection, including “establishing a multilink point-to-point connection between the mobile station and the other party, dividing the subleg between the mobile station and the interworking function into subchannels, and transferring each

link of the multilink point-to-point connection in a dedicated subchannel on the subleg between the mobile station and the interworking function” as recited in claim 25 and its dependent claims 26-29.

Gavrilovich merely discloses a wireless communication system wherein a mobile unit communicates over multiple channels at rates higher than a basic rate 9600 bits per second. An inverse multiplexer functions to separate a broadband communication signal into a number of portions or data streams which are transmitted over separate, independent wireless traffic channels and set up as standard calls. In the reverse direction, the inverse multiplexer functions to recombine individual portions or data streams received over separate, individual wireless traffic channels into substantially the originally transmitted communication signal.

Thus, the Gavrilovich system is similar to those systems discussed in the present application on page 2, lines 22 to 36, used for multi-channel high speed data transmission. As noted also by the Office Action, Gavrilovich fails to teach or suggest a multilink Point-to-Point Protocol (PPP) between a data network access point and an interworking function, and that an interworking function configured to adapt each PPP link of the multilink PPP to a corresponding number of subchannels on a connection leg between the interworking function and a mobile station, in order to transfer the PPP links transparently between the mobile station and the network access point. However, the Office Action referred to Maurya as allegedly disclosing a technique using the multi-link PPP protocol.

Nevertheless, Maurya merely discloses a multi-link PPP through a PSTN between a server and a client PC, i.e., one PSTN leg. Thus, such an arrangement is similar to the conventional system discussed on page 2, lines 10 to 21 (and in Figure 1) in the present application. Accordingly, Maurya fails to teach or suggest an interworking function that is configured to adapt each PPP link of a multilink PPP to a corresponding number of subchannels on a second connection leg between the interworking function and a mobile station, in order to transfer the PPP links transparently between the mobile station and the network access point.

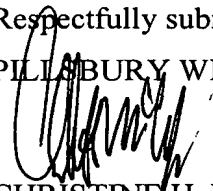
Therefore, claims 1-29 are patentable over the combined teachings of Gavrilovich and Maurya.

All rejections and objections having been addressed, it is respectfully submitted that the present application is now in condition for allowance, and a notice to that effect is earnestly solicited. Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

RASANEN -- 09/601,737
Client/Matter: 060258-0271455

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Respectfully submitted,
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ABSTRACT

A mobile communication system includes a mobile station and an interworking function for establishing a high-speed point-to-point data connection to a data network access point, which supports a multilink point-to-point protocol. The point-to-point connection includes a first subleg between the mobile station and the interworking function and a second multilink subleg between the interworking function and the access point. The first subleg between the mobile station and the interworking function is allocated to as many subchannels or sub-traffic streams as there are channels (e.g., time slots of 64 kbits/s) on the second subleg between the interworking function and the access point of another telecommunications network, such as an IAP server.